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Exploring the Development of Attachment in Infants of Adult and Adolescent Mothers

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Introduction

- Maternal sensitivity is an important factor in the development of Secure attachment relationships (Ainsworth et al., 1978; De Wolff & van IJzendoorn, 1997; Juffer et al., 2007)

- Early research on the origins of attachment relationships was conducted using middle-class samples (Ainsworth et al., 1978)

- More recent work has explored the antecedents and developmental consequences of attachment relationships in high-risk groups (Bailey et al., 2007; Carlson, 1998; van IJzendoorn et al., 1999)

- One high-risk group that has received recent attention in attachment research is adolescent mothers (Cairns, Cairns, Xie, Leung, & Hearne, 1998; Camp, 1995)
Adolescent mothers have been identified as a high-risk group for various reasons:

- **Demographic Factors:**
  - *Education* (Coley & Chase-Lansdale, 1998; Corcoran, 1998; Tarabulsy et al., in press)
  - *Income* (Cairns, Cairns, Xie, Leung, & Hearne, 1998; Jaffee et al., 2001)

- **Social Supports:**
  - *Partner Involvement* (Jaffee et al., 2003; Tarabulsy et al., 2005)
  - *Family supports* (Ward & Carlson, 1995)

- **Stress:**
  - *Chaotic and stressful environments* (Cairns et al., 1998; Davis & Cummings, 1994; De Wolff & van Ijzendoorn, 1997; van Ijzendoorn et al.,)
Introduction: Adolescent Motherhood

- Infants born to adolescent mothers are subsequently at-risk for various detrimental outcomes:
  - **Attachment Relationships:**
    - Insecure attachment relationships (Broussard, 1995; Forbes et al., 2007; Lamb, Hopps, & Elster, 1987; Madigan et al., 2008; van Ijzendoorn et al., 1999)
    - Insecure attachment relationships are associated with later difficulties (Sroufe, 2005; Sroufe et al., 2005)
  - **Developmental Outcomes:**
    - Impulse control and behavioural problems (Jaffee et al., 2001)
    - Social and emotional functioning (Spieker et al., 1994)
- Thus, being raised by an adolescent mother places an infant at-risk for insecure attachment and subsequent developmental difficulties
Mechanisms underlying the association between adolescent motherhood and insecure attachment:

- **Adverse circumstances and maternal sensitivity:**
  - Adolescent mothers display higher levels of insensitivity than adult mothers (Bailey et al., 1999; Haskett, Johnson & Miller, 1994; Spieker et al., 1994; Tarabulsy et al., in press)
  - Adolescent mothers show greater variability, more atypical behaviours and a broader range of behaviour during interactions with their infants (Bailey et al., 2007; Forbes, Evans, Moran & Pederson, 2007)

- **Maternal sensitivity and attachment security:**
  - Theoretical and empirical work has established maternal insensitivity as an important contributor to Insecure attachment relationships (Ainsworth et al., 1987; DeWolff & van Ijzendoorn, 1997)
While many studies have looked at the development of attachment relationships for adult and adolescent mothers separately, few studies have directly compared these two groups in a single study.

- The current study further explored the origins of attachment relationships for adolescent mothers and their infants by directly comparing the development of these processes with adult mothers and their infants.

- The hypothesis that differences in the distributions of attachment classifications among these two populations is a result of low levels of sensitivity has yet to be tested in a mediational analysis.

- The current study will test a model whereby differences in the quality of attachment relationships between these two groups is, at least in part, mediated by maternal sensitivity.
### Methods: Participants

<table>
<thead>
<tr>
<th></th>
<th>Adult Mothers</th>
<th>Adolescent Mothers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of Participants</strong></td>
<td>49</td>
<td>49</td>
</tr>
<tr>
<td><strong>Average Age at Birth</strong></td>
<td>30 (4.50)</td>
<td>18.5 (1.00)</td>
</tr>
<tr>
<td><strong>Education Level</strong></td>
<td>14.5 years</td>
<td>11 years</td>
</tr>
<tr>
<td><strong>Average Annual Income</strong></td>
<td>$30,000 – 40,000</td>
<td>$10,000 – 19,000</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td>8 % single</td>
<td>54% single</td>
</tr>
<tr>
<td><strong>Parenting Stress Index (PSI)</strong></td>
<td>197 (33.40)</td>
<td>220 (33.96)</td>
</tr>
</tbody>
</table>
Methods: Materials

- Maternal Behaviour Q-Sort (MBQS, Pederson & Moran, 1995):
  - 90 items on individual index cards that provide descriptions of a mother’s interactions with her infant.
  - “Responds to baby’s signals” and “Scolds and criticizes baby”.
  - Q-Sort methodology is used by experienced sorters to arrange the cards into nine piles of ten cards each, ranging from pile 1 (Least like the mother) to 9 (Most like the mother).
  - Global sensitivity represents the correlation between the scores of the observers Q-sort with those of a theoretically constructed sort of a prototypically sensitive mother.

- Strange Situation Procedure (SSP, Ainsworth et al., 1978).
Methods: Procedures

- **Home Visit (12 Months):**
  - Toy interaction
  - Maternal report and child developmental assessment
  - Maternal divided attention task

- **Q-Sort of the MBQS**

- **Laboratory Visit (13 Months):**
  - Strange Situation Procedure
## Results

### Mean Levels of Maternal Sensitivity

<table>
<thead>
<tr>
<th>Maternal Sensitivity</th>
<th>Adult Mothers</th>
<th>Adolescent Mothers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.51 (0.49)</td>
<td>.09 (0.63)</td>
</tr>
</tbody>
</table>

$t (1,49) = 7.06, p < .001$
## Results

### Distributions of Attachment Classifications

<table>
<thead>
<tr>
<th></th>
<th>Secure</th>
<th>Avoidant</th>
<th>Resistant</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adult Mothers</strong></td>
<td>34 (69.39%)</td>
<td>10 (20.41%)</td>
<td>5 (10.20%)</td>
<td>49 (100%)</td>
</tr>
<tr>
<td><strong>Adolescent Mothers</strong></td>
<td>19 (38.78%)</td>
<td>21 (42.86%)</td>
<td>9 (18.37%)</td>
<td>49 (100%)</td>
</tr>
</tbody>
</table>

- **Results**
  - Secure: 34 (69.39%)
  - Avoidant: 10 (20.41%)
  - Resistant: 5 (10.20%)
  - Total: 49 (100%)

- **Adolescent Mothers**
  - Secure: 19 (38.78%)
  - Avoidant: 21 (42.86%)
  - Resistant: 9 (18.37%)
  - Total: 49 (100%)
Results: Mediational Analyses

Adult/Adolescent -> Maternal Sensitivity (a)
Maternal Sensitivity -> Attachment Security (b)
Adult/Adolescent -> Attachment Security (c, c')
Results: Mediational Analyses

Maternal Sensitivity

Adult/Adolescent $\beta = .31, p < .01$

Attachment Security
Results: Mediational Analyses

Maternal Sensitivity

β = .35, p < .001

Adult/Adolescent → Attachment Security
Results: Mediational Analyses

Maternal Sensitivity

Adult/Adolescent → Attachment Security

$\beta = .33, p < .01$
Results: Mediational Analyses

Maternal Sensitivity

Adult/Adolescent

Attachment Security

$\beta = .26, p < .05$
Results: Mediational Analyses

Maternal Sensitivity

Adult/Adolescent $\beta = .31, p < .01$

Attachment Security
Results: Mediational Analyses

Maternal Sensitivity

Adult/Adolescent

Attachment Security

$\beta = 0.31, p < 0.01$

$\beta = 0.22, p < 0.05$
Results: Mediational Analyses

Maternal Sensitivity

Adult/Adolescent

Attachment Security

\[ \beta = 0.31, p < 0.01 \]

\[ \beta = 0.22, p < 0.05 \]

Sobel Test = \(-2.08, p < 0.05\)
Conclusions

- Adolescent mothers experienced challenges not faced by adult mothers:
  - Income level
  - Education level
  - Single parenthood
  - Parenting Stress
- Adolescent mothers were significantly less sensitive in their interactions with their infants than adult mothers.
- Adolescent mothers were characterized by higher rates of Insecure relationships with their infants than adult mothers.
- Challenges associated with adolescent motherhood appear to lower sensitivity during mother-infant interactions, contributing to the development of Insecure attachment relationships.
Discussion

Theoretical Implications

- Differences in attachment classifications for infants of adult and adolescent mothers are, at least in part, accounted for by variation in the quality of maternal interactions.

- In contrast, there is some research to suggest other aspects of a high-risk environment prevent the development of Secure attachment relationships, in spite of high maternal sensitivity:
  - Repeated separations (Sagi, van Ijzendoorn, Aveizer, Donnell, & Mayseless, 1994)
  - Domestic fighting (Davis & Cummings, 1994)
Discussion

Theoretical Implications

• The current findings suggest this is not the case for adolescent mothers

• However, it is possible that these characteristics of high-risk environments may impact attachment security by lowering levels of maternal sensitivity, or contributing to the development of insecure attachment relationships through another pathway
Clinical Implications

- These findings suggest that maternal sensitivity is an important target for clinical interventions aimed at improving the quality of attachment, and subsequent developmental outcomes, for infants of adolescent mothers.

- This is consistent with intervention studies that have found that increasing levels of maternal sensitivity also leads to improvements in attachment security (Juffer, Bakersmans-Kranenburg, & van IJzendoorn, 2007; Moran, Pederson & Krupka, 2005).
Discussion

Clinical Implications

- However, more research is necessary to understand specific factors associated with adolescent motherhood that are impacting the quality of their interactions.
  - This may help further inform clinical interventions specifically targeting adolescent mothers.